23 June 06

MEMORANDUM

From: Safety Officer, NSF Safety Department
To: Safety Committee Representative

Subj: ***WEEKLY SAFETY NOTES***

Ref: (a) DGREGCOORDINST 5100.9 Series
Encl: (1) Safety Topic Entitled **"Scaffold Safety"**
(2) Stand Up Safety Meeting (SUSM) Report

1. Per reference (a), Safety Committee Representatives are required to conduct Stand-Up Safety Meetings (SUSM) bi-weekly in industrial areas and once every quarter in offices.

2. Enclosure (1) is provided as a suggested topic for your SUSM. Other topics relevant to your work center operations such as hazards associated with the material, equipment and machines may be used.

3. Request submit properly filled-out original copies of enclosure (2) to the NSF Safety Office NLT 5 days after the meeting with the names and signatures of attendees.

R. R. Regacho

Copy to:
NSF CO/XO

SAFETY MEETING REPROS:

Navy Support Facility, Diego Garcia

Fri, 23 June 06

Scaffold Safety

Each year, more than 60 workers are killed by falls from scaffolds. About 1 in 5 of the fatal falls involved construction activities. Besides problems with planks and guardrails, the main cause of injuries and deaths on scaffolds are poor planning for assembling and taking scaffolds apart, missing tie-ins on bracings, loads that are too heavy, and being too close to power lines. People below scaffolds also get hurt from falling objects.

Collapsing scaffolds have been known to destroy buildings, trucks and equipment. It is ranked as one of the major causes of death on a construction site. All of these can be avoided with proper planning and equipment.

OSHA 1926.451 requires that anyone working on or even near a scaffold be trained in scaffold safety requirements.

The Five most serious scaffold hazards are:

- Falls
- Unsafe access
- Falling objects
- Electrocution
- Scaffold collapse

Wrong Scaffold Set up

- The Plank is supported by an extension ladder, a closed step ladder and a straight ladder.
- The guardrails are not acceptable.
- There is no stability.

1926.451 Scope, Application

- Covers all scaffolds used in workplaces.
- Does not apply to crane or derrick suspended personnel platforms, which are covered by 1926.550 (g).
- Aerial lifts are covered by 1926.453.

Scaffold Requirements

- Be on a firm foundation with base plates.
- Be plumb, square and adequately braced.
- Have a fully planked work deck.
- Have guardrails over 10 feet.
- Be tied in over 4 vertical/1 horizontal high.
- Have an adequate means of access.

Safety Meeting Repros:Scaffold Safety

Capacity

Scaffold and scaffold components must be:

- ✓ Capable of supporting, without failure, their own weight and at least 4 times their maximum intended load (Under 1926.451 (a)).
- ✓ Designed by a qualified person.
- ✓ Built and loaded within design.

Tip: Removing braces from a scaffold system while in use will cause the weight on the scaffold to be distributed to fewer structural members. This may cause an overload on the scaffold and may result in a system collapse. Even if they are "in the way", braces should not be removed while work is being performed on a scaffold.

"When scaffold frames are interconnected, failure of one frame can cause the whole system to collapse".

Competent Person

Critical to scaffolding safety are the use of competent persons for the design, erection/dismantling, and maintenance of scaffolds, and trained workers for their use. Therefore, assessing personnel abilities should be a part of all phases of the scaffolding inspection. A competent person is an individual that is trained to recognize the hazards associated with the work activity.

Design and Erection

- Scaffolds must be designed by a competent person.
- Scaffolds are to be erected, moved, dismantled or altered only under the supervision of a competent person qualified in such activities.
- Scaffolds over 125 feet (38 meters) in height above their base plates shall be designed by a registered professional engineer and shall be constructed and loaded in accordance with such design.

Training

- Scaffolds are to be erected, moved, dismantled or altered only by experienced and trained employees who have been selected for that work by the competent person.
- Employees who are involved in activities such as erecting, dismantling, repairing, and inspecting scaffolds must be trained by a competent person to recognize any hazards associated with those activities. Training shall include:

a) The nature of scaffold hazards such as electrical, fall, falling objects hazards.
b) Correct procedures for erecting, dismantling, etc. the type of scaffold in question.
c) The design criteria, maximum intended load capacity and intended use of the scaffold.

- Employers shall retrain any employee when they have reason to believe that the employee lacks the skill or understanding to safely erect, use, or dismantle a scaffold. Retraining is required in at least the following situations:

a) Changes at the worksite present a hazard for which an employee has not previously been trained.
b) Changes in the types of scaffolds, fall protection, falling object projection or other equipment present a hazard for which an employee has not previously been trained.
c) Inadequacies in an affected employee's work indicate that the employee has not retained the necessary proficiency.

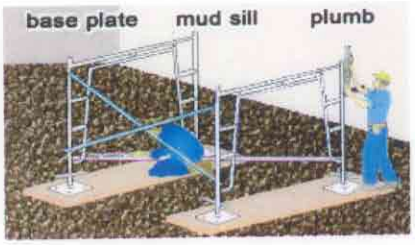
Safety Meeting Repros:Scaffold Safety

Scaffold Foundations

Base Section

It is impossible for a stable structure to be built upon a foundation that does not start out square and level. OSHA has standards that apply specifically to the steps that must be taken to assure a stable scaffold base.

Firm Foundation



- In order to assure stability, supported scaffolds must be set on:
  a) Base Plates
  b) Mud sills
  c) Other adequate foundation
- Footings must be capable of supporting the loaded scaffold without settling or displacement.

Proper foundation on wood sills: scaffold end frames equipped with adjustable screw legs and with base plates set on mud (wood) sills

- Unstable objects may not be used to support scaffolds or platform units.
- Front-end loaders and similar pieces of equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.
- Forklifts shall not be used to support scaffold platforms unless:
  a) The entire platform is attached to the fork
  b) The forklift is not moved horizontally while the platform is occupied.

Plumb

- Supported scaffold poles, frames, uprights, etc. must be plumb and braced to prevent swaying and displacement. In general, a level is the easiest way to achieve the desired right angles.

Bracing

- Frames and panels must be connected by cross, horizontal or diagonal braces, alone or in combination, which secure vertical members together laterally.
- As frames are stacked, cross braces must be of such length as will automatically keep the scaffold plumb, level, and square.
- All brace connections must be secured to prevent dislodging.

Tip: A level may be used frequently during assembly to guarantee that new structural components remain on line.

Pinning

- Frames and panels must be joined together vertically by coupling or stacking pins or equivalent means.
- Frames and panels must be locked together to prevent uplift, where uplift can occur. Uplift is the separation of a frame from the frame below it.

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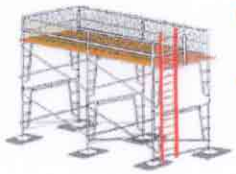
Components

- Scaffold components manufactured by different manufacturers must not be intermixed, unless they fit together without being forced and the scaffold's structural integrity is maintained.
- Scaffold components manufactured by different manufacturers are not allowed to be modified to make them fit together, unless a competent person determines that the resulting scaffold is structurally sound.
- Scaffold components made of dissimilar metals must not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component below OSHA standards.

Access

Employers are required to provide safe scaffold access such as ladders, stairs etc. Erectors and dismantlers face additional access problems due to the incomplete condition of the scaffolding. Under the general standards:



- Employees must be able to safely access any level of a scaffold that is 2 feet above or below an access point.
- OSHA standards specifically forbid climbing cross-braces as a means of access.

Electrical Hazards

Because they may be built in proximity to overhead power lines, and because they are often made of metal, scaffolds can put workers at risk of electrocution. This risk can be removed through proper clearance and maintenance.

- Scaffolds must not be close enough to overhead power lines that they, or any conductive materials (e.g. building materials, paint roller extensions, scaffold components) that may be handled on them, come closer than 10 feet to the power line
- Scaffolds may be closer to overhead power lines than specified above if such proximity is necessary for the type of work being done, and if the power company or electrical system operator has been notified and has either:
  a) De-energized the lines
  b) Relocated the lines
- Install protective coverings to prevent accidental contact with the lines.
- All portable electric equipment must be protected by:
  a) GFCI (ground-fault circuit interrupters)
  b) An AEGCP (Assure Equipment Grounding Conductor Program)

Fall Protection

The number one scaffold hazard is worker falls. Fall protection consists of either personal fall-arrest systems or guardrail systems, and must be provided on any scaffold 10 feet or more above a lower level. Specific requirements are described below:

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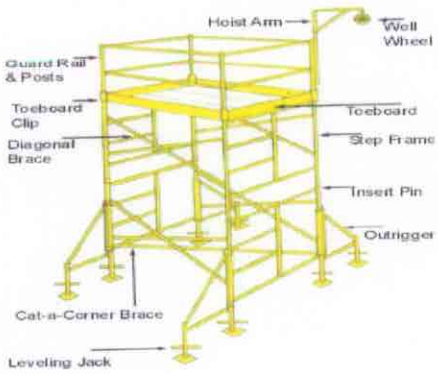
- Each employee on a scaffold more than 10 feet above a lower level must be protected from falling to that lower level.
- Fall protection consists of either personal fall arrest systems or guardrail systems meeting OSHA requirements.
- Employees performing overhand bricklaying operations from a supported scaffold must be protected from falling from all open sides and ends of the scaffold, except at the side next to the wall being laid.

Guard Rail Systems

- Guardrail systems must be installed along all open sides and ends of platforms, and must be in place before the scaffold is released for use by employees other than erection/dismantling crews.
- Walkways located within a scaffold must have guardrail systems installed within 9½ inches of and along at least one side of the walkway.
- Each top rail or equivalent member of a guardrail system must be able to withstand a force of at least 200 pounds applied in any downward or horizontal direction, at any point along its top edge. The top edge height of top rails on supported scaffolds must be between 36 inches and 45 inches.
- Mid rails, screens, mesh, intermediate vertical members, solid panels, etc., must be able to withstand a force of at least 150 pounds applied in any downward or horizontal direction, at any point along the mid rail or other member.
- Guardrails must be surfaced to prevent punctures or lacerations to employees and to prevent snagging of clothing, which may cause employees to lose their balance.
- Ends of rails may not extend beyond their terminal posts, unless they do not constitute a projection hazard to employees.
- In lieu of guardrails, cross-bracing may serve as a top rail or mid rail, providing the crossing point is:
  a) Between 20 and 30 inches above the work platform for a mid rail.
  b) Between 38 and 48 inches above the work platform for a top rail.

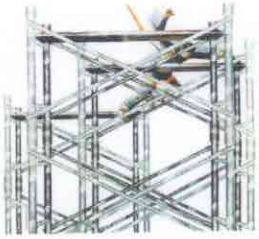


Safety First

Always remember to consider safety first in any activity, working on a scaffold is no exception. A responsible worker will always take the necessary steps to eliminate, prevent and control any hazard. Always follow the safety regulations established by OSHA when working on scaffolds, including the use of fall protection systems.

Always work the safest way, for life is a high price to pay.

Secure that scaffolding;
Don't let your safety hang in the balance.



Source: OSHA 1926.451